DOCUMENT RESUME

ED 220 511 TM 820 527

AUTHOR	Higgins, James E.; And Others
TITLE	Using Measurement and Evaluation to Promote Learning.
INSTITUTION	Indiana State Univ., Terre Haute. Curriculum Research and Development Center.
PUB DATE	Apr 82
NOTE	42p.
AVAILABLE FROM	Curriculum Research and Development Center, Statesman Towers West, School of Education, Indiana State University, Terre Haute, Indiana 47809.
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Academic Achievement; Criterion Referenced Tests; *Curriculum Development; Early Childhood Education; Elementary Secondary Education; Evaluation Methods; *Formative Evaluation; Mastery Learning; Measurement; Reading Tests; Screening Tests; *Student Evaluation; Student Improvement; Teacher Attitudes; *Test Use
IDENTIFIERS	Elementary Secondary Education Act Title I

ABSTRACT

This monograph contains seven articles which focus primarily on formative evaluation for the purpose of furthering the learning of pupils. The articles include: an overview of formative evaluation by Peggy Chnupa; a description of the use of measurement and evaluation as an early screening for entering school children, by Sherrel Marginet and Phyllis Nordhaus; a treatment of a specific set of materials used for screening, by Dixie Whitney; a discussion of the use of test data to help guide instruction with young children in reading, by Jean Berger; test data uses in determining placement of junior high school pupils at levels where they can best operate and best achieve, by JoAnne Dowers; pre- and post-criterion-referenced test uses at the high school level, by James Thomas; and a description of the measurement and evaluation component of a system-wide mastery learning program, by Larry Rowe. (Author/PN)

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USING MEASUREMENT AND EVALUATION TO PROMOTE LEARNING

by

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Published by:
Evaluation Assistance Center
and
Curriculum Research and
Development Center
School of Education
Indiana State University
Terre Haute, Indiana 47809

April 1982

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INTRODUCTION

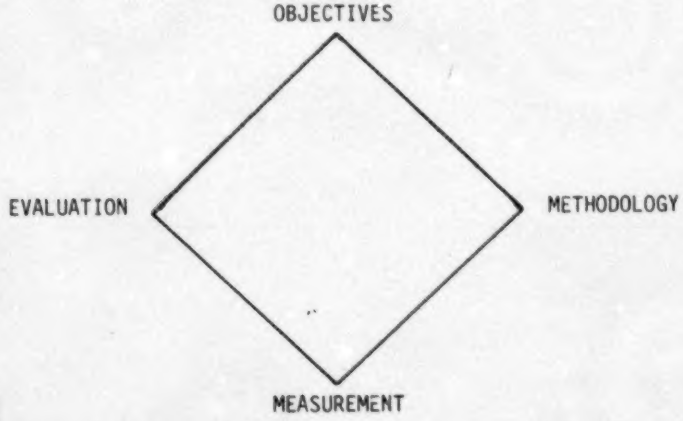
The Evaluation Assistance Center at Indiana State University was established in 1979 through a grant from the Lilly Endowment, Incorporated. Housed in the School of Education, the Center is staffed by three faculty members, four Ph.D. students, and one full-time secretary. The general focus of the Evaluation Assistance Center is to work with teachers and administrators in Indiana assisting them in the development and/or improvement of their skills in measuring and evaluating pupil achievement.

The Center operates under a basic premise:

> The more knowledge and skills public school teachers and administrators bring to the task of measuring and evaluating pupil achievement, the more those teachers and administrators will be able to identify the needs of pupils. The better the identification of needs, the more direction there is for instruction and/or curricular change. This "pinpointing" of instruction and curricular change serves to provide an environment which produces higher achievement.

Very briefly stated, the premise suggests that measurement and evaluation can be used to further the achievement of pupils. It is to this end that this monograph is directed.

Far too often, measurement and evaluation have been considered to be quite apart from curriculum and instruction. Only recently has the education community begun to think in terms of measurement and evaluation's being part of the teaching process. The following figure illustrates the relationship that exists.



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Successful teaching is not possible without clearly understood objectives. It is obvious that determining how to approach teaching the subject is somewhat influenced by the content you are about to teach. The objectives that you have established and the methodology you choose to attempt reaching those objectives will have some bearing on the types of measuring strategies and the standards you establish for evaluating success.

This monograph focuses primarily on formative evaluation--the evaluation of "how things are going" rather than a decision concerning "how things have gone." The educators who have contributed to this publication have focused their writings on evaluation for the purpose of furthering the learning of pupils as opposed to evaluation for assignment of a grade or a mark. Peggy Chnupa gives a good overview of what formative evaluation is and is not. The article by Sherrel Marginet and Phyllis Nordhaus describes the use of measurement and evaluation as an early screening for children who are just entering school, focusing on allowing teachers to gain awareness of potential difficulties children might encounter. Dixie Whitney deals with a specific set of materials as they are used for screening in a little different way.

Jean Berger discusses the use of test data to help guide her instruction as she works with young children in reading. JoAnne Dowers, a junior high school teacher, uses test data in determining placement of junior high school pupils at levels where they can best operate and, therefore, best achieve. Jim Thomas, a coordinator of language arts (K-12), focuses mainly on the use of pre- and post-criterion-referenced tests at the high school level. And Larry Rowe describes the measurement and evaluation component of a system-wide mastery learning program in upstate New York.

This monograph is not intended to serve as a model for others to duplicate. Rather, it has been designed in hopes of stimulating the reader to think in terms of how measurement and evaluation might play a role in furthering the learning of the students in his/her own classroom.

FORMATIVE EVALUATION: THE NEGLECTED EVALUATION TOOL

Peggy Chnupa

The use of summative evaluation in schools is evident. In the eyes of the student, evaluation generally means a grade on a test or assignment. The teacher interprets evaluation as averaging grades and determining the final grade for the report card.

While summative evaluation has its place in determining a student's achievement of overall objectives, it fails to identify an important aspect in the teaching/learning sequence; that is, a redirection of instruction. If instruction is to be tailored to fit the learner's needs, the teacher must employ formative evaluative techniques to meet that challenge.

Formative evaluation, as interpreted by Hopkins and Antes (1978), is a judgement of an ongoing program used to provide information for product or program review, identification of the effectiveness of the instructional process, and the assessment of the teaching process (p. 422). This article will deal primarily with the instructional process.

The instructional process gives rise to many questions about the ability of the learner, and the teacher must face a variety of evaluative decisions:

Does the child have mastery of the necessary prerequisite skills?

After the initial instruction, has the child mastered the information taught?

If mastery was not achieved, what correctives are necessary?

If the child has mastered the skill, how much additional practice is required?

Does the child need extension activities?

The answers to all of these questions require an ongoing assessment of the learner. The challenge facing the teacher is conducting the ongoing assessment, recording the assessment data, and providing appropriate instructional and practice material.

Assessment techniques developed to identify needs of the learner do not have to be time-consuming or complex. Techniques used to elicit

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response from the total group are as effective as teacher observation or paper and pencil testing. A quick, simple assessment gives the teacher immediate information to evaluate the learner's progress and identify the next step in the learning cycle.

If students are required to answer questions with a yes or no response, the following techniques may be used:

1. Students hold up right hand for yes and left hand for no.
2. Students stand up or remain seated.
3. Students clap hands or remain quiet.
4. Students hold up cards with yes or no.
5. Students nod or shake their heads.

If the student must select from multiple responses, the possible choices may be lettered so the learner may record the letter instead of the total response, as below:

$$32 - 15 = _____$$

(a) 17 (b) 23 (c) 27 (d) 47

This type of response can be recorded on a strip of paper or a laminated card. Ten problems of this variety can be checked in a total group situation within a few minutes, enabling the teacher to identify students needing additional instruction (Hales, 1978).

Worksheets focusing on the particular skill that has been taught can provide formative evaluative data. It is important that the teacher determine beforehand if the worksheet deals with one skill or a combination of several skills. The practice sheet should deal with one skill if it is to provide sufficient feedback to the teacher about the learner's progress with a particular concept.

While elicited group responses or paper and pencil measurements are excellent formative evaluation tools, teacher observation is an additional resource. Student responses during verbal questioning by the teacher, puzzled looks, and a barrage of questions after an assignment is made are reliable indications that some further instruction by the teacher is necessary.

Record keeping can be an overwhelming task for the teacher unless it is a well-managed system. The Utah Systems Approach to Individualized Learning (U-SAIL) recommends a simple design that gives the teacher immediate feedback on group progress with skills. A grid

format listing skills across the top and student names along the side enables the teacher to determine immediately which students are ready to proceed. An example of this is shown below:

	initial consonant	final consonant	short vowel	long vowel
Joe				
Susan				
Jacob				

A marking system should be developed to denote mastery. Concepts that are mastered should be systematically reviewed (Hales, 1978).

Once the teacher has conducted the assessment and recorded the results, the appropriate instructional or practice material must be provided. This requires organization of resources by concepts or skills so that materials are readily available for the teacher to use in instructional situations. Well-planned lessons that identify assessment techniques, correctives, practice materials, and extension activities prepare the teacher for all possible outcomes while teaching a skill or a concept.

The implication from this instructional sequence is a reorganization of the curriculum listing prerequisite skills in the scope and sequence of instruction. Proponents of mastery learning utilize summative evaluation in measuring prerequisite skills and determining mastery while formative evaluation or diagnostic progress tests measure progress toward the lesson objectives (Barker, 1979).

The mastery learning approach of a diagnostic corrective extension sequence, unlike many other individualized approaches requiring more sophisticated and often unrealistic techniques in classroom management, can be successful in large group instruction.

In a diagnostic prescriptive approach to instruction the value of formative evaluation is clear. If student progress is monitored consistently throughout the teaching/learning cycle, every student has the chance to master the skill and feel successful about the learning experience. Successful learners are motivated learners, resulting in greater achievement gains and fewer discipline problems.

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EARLY ASSESSMENT: A GATEWAY FOR THE FUTURE

Sherrel Marginet and Phyllis Nordhaus

Most children enter school highly motivated and ready to learn. With many students this enthusiasm for learning begins to wane early in the academic years quite possibly because the basic fundamentals of sight, hearing, speech patterns, and neuro-muscular skills are not present within acceptable limits to help the child have a running start at being a successful student.

We at Haubstadt Public School have been using a type of prescription guide that seems to have a positive bearing in combating problems that are not conducive to learning. Our basic tool of diagnosis is kindergarten screening. All students entering kindergarten are screened in the areas of auditory and visual perception and motor and language development. We then follow through with an individualized learning center approach that is both diagnostic and prescriptive. The project was designed to provide a continuous growth pattern from kindergarten through first grade and possibly on into the second grade.

The model being used was developed by Wendt (1973). It provides a broad basis for the sequentialization of developmental skills so that a child placed within the program is always working toward terminal objectives.

Part of the screening process we use is taken from this Waupun (Wisconsin) model. We have adapted the Waupun Screening Model to reflect our school situation and community. It is fairly simple to administer and the results are easy to interpret. If any potential discrepancy exists, further testing is then administered in order to provide an adequate supply of results. We feel any suspected shortcomings should be substantiated with more than one observation.

Steps involved in the process are:

1. A questionnaire asking parents their impressions of the child's visual acumen and a readiness book containing appropriate ideas, not only for the students but also for the parents, are disseminated in the spring before the kindergarten year.

2. The actual screening is done beginning with Level III. We later check Levels II and I if a child fails to successfully negotiate Level III. Included is a visual acuity exam that is administered by

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the school nurse. After results of the vision screening have been reviewed, a thorough scoping by an optometrist is used to check for amblyopia, hyperopia, astigmatism, and muscle imbalance. While actual screening is being done, all parents are invited to a short clinic explaining exactly what we are trying to accomplish with the screening process.

3. If any indications of potential learning problems occur during the screening, the parents are notified and asked to come in for a conference within a day or two so that the results may be discussed. For others, the results are sent by mail to the parents with a notation that we would encourage them to make an appointment to discuss the findings of the screening. This conference along with the information given to those who attend the screening process clinic helps eliminate any misconceptions.

4. All results are then recorded on a kindergarten data sheet so that the teacher may have a "picture" of each student. Both weaknesses and strengths are recorded. Each successive day's record keeping will reflect the student's progress and what is being done to make the follow-up meaningful.

5. We go into a post-screening, usually at level IV in the Waupun model, to help assess readiness for the first grade. Because we have two parochial schools in our school district that do not offer kindergarten, many of our students matriculate to schools other than the public school where the screening takes place. All results and activities during the kindergarten sequence are reviewed with the personnel of those respective schools.

6. We make sure that parents and patrons of the school (paraprofessionals) are included in the screening sequence to ensure they will have more than just a cursory knowledge of what is being accomplished. It is essential to be selective with these people. We try to introduce, each year, new personnel who are capable of administering the model. This allows us to have a ready pool of paraprofessionals available. These paraprofessionals add strength to the program and are also helpful in establishing a positive image for the screening program in the community.

The following paragraphs will explain the actual application of the tool that is being used in the screening process.

> There are four basic learning processes (modalities) which need assessment, the auditory and visual processes that provide input of information, and the motoric and verbal modalities which are expressive processes. The levels noted in the model begin at Level I which is strictly a sensory motor activation and proficiency level and move sequentially

to Level VI which has the terminal objectives of the language based curriculum. Level II is the reflexive level with sensory awareness and simple discrimination of stimuli. Level III basically involves representing of stimuli involving visual and auditory perception in the receptive channel, organized internally so that it has meaning, and the coordination of processes at the expressive level. . . .

The assessment instrument begins with children entering kindergarten. It can easily provide assessment at the three or four year old level, or for a six year old entering first grade. Because of the age and level of development of the child entering school and due to time considerations, the assessment instrument begins with an assessment of all entering children at Level III, Representational Level. Assessment then proceeds upwards or downwards (or terminates) from Level III depending upon the child's success (or lack of it). Therefore, after Level III he will either move downwards until he meets success and/or upwards until he meets difficulty. The results are then profiled and given to the classroom teachers who begin instruction at the appropriate level. (Wendt, 1973, pp. 3, 6)

The individual profile from the screening assists the teacher in planning for individual needs during the kindergarten experience. It locates the child along a developmental curriculum sequence and integrates the assessment instrument with curricular objectives in order to use the results properly. The tests determine where each child will be placed along the sequential program. Teaching begins at that particular level, moving up as the student masters more difficult objectives. A prescriptive guide is provided with the screening device to focus on an individual's needs.

The classroom is organized for independent learning situations along with a traditional classroom setting. Program objectives are developmentally outlined and the activities and learning centers are organized to develop skills needed for reading, math, and language development. The individual needs of the student (determined from the individual profile received after screening) determine the kinds of centers that will be in operation. The centers are actually ability grouped without the students' being aware of this grouping. Each student's placement is determined by the screening results, and a day-by-day accounting of progress is kept by the kindergarten teacher. A paraprofessional is used one hour per day to facilitate the learning centers.

The prescription guide provided to the teacher contains activities to motivate as well as instruct in the objectives of the program. It provides the teacher with activities to enrich and supplement the regular curriculum. As mentioned, the child's performance determines

the activities used by the teacher. For the most part, teacher-made manipulative and gaming devices have proven to be most advantageous to the child, but commercial materials are also used in the listed activities.

The student who works at learning centers in addition to learning in the traditional setting will develop skills in self-management and independence. The student will also learn to work with other students in large and small group settings. In group situations, the student learns to carry his/her share of the responsibility for learning. The learning centers work when the student works! The learning center approach is a way to instill self-confidence in the children.

The assessment used at Haubstadt Public School is not used for the purpose of isolating various abilities or disabilities. Neither does it actually determine readiness for school. We are trying to determine what level of maturity the child has reached before entering school so we may take the kindergarten child along a behaviorally defined sequence until he/she reaches specific goals reflecting the reading, writing, and arithmetic skills needed to begin the first grade.

We must have the flexibility to create a healthy learning environment for all children. Kindergarten screening has helped us identify specific needs. We feel we presently offer an appropriate atmosphere for more students today than prior to our implementation of the screening program.

REFERENCE

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WHO DARES TO LEGISLATE WHEN A CHILD WILL WALK, TALK, OR ENTER SCHOOL?

Dixie Whitney

"Hold childhood in reverence, and do not be in any hurry to judge it for good or ill . . . . Give nature time to work before you take over her task, lest you interfere with her method . . . . A child ill taught is further from virtue than a child who has learned nothing." This warning of Rousseau's has become the "cornerstone" of the Developmental Placement program of the Gesell Institute for Human Growth and Development (Haines, 1981). In their extensive research, they have found that nearly 50 percent of all children are placed in a school environment before they are developmentally mature enough to handle the placement. This "overplacement" results in frustration and usually failure (retention). But, perhaps more importantly, most of the students who are labeled as learning disabled or as requiring special remedial work could have avoided these situations if their school officials had offered a screening procedure *before* kindergarten *and* first grade to ensure proper placement.

Developmental Placement*

To assess the developmental age of a child, it is necessary to administer a systematic series of tasks to measure not merely learning readiness, but also school readiness. The developmental age of the child refers to "the age at which the child is behaving as a total organism" (Carll, 1980). A child might very well be functioning at a six-year-old level intellectually (or in some other aspect of his development), but a composite of his *whole* development might place him at a five-year-old developmental age. The need for an instrument to evaluate *more* than reading readiness or other skills was obvious to the Gesell researchers. They created the Developmental Placement Screening called *School Readiness* (Ilg, Ames, Haines, & Gillespie, 1978), which involves testing and interviews at age four (prior to entering kindergarten) and again at every level of schooling, K-6. This formative evaluation at every grade level provides teachers with ample information to make sound decisions on grade placement. If the child's stage of development does not match the tasks he will be asked to perform in the next grade, the teacher can suggest certain alternatives or preparation to prevent the child from entering a situation that will be too difficult for him.

Dixie Whitney is a Ph.D. candidate who is on the staff of the Evaluation Assistance Center.

*A term developed by the Gesell Institute of Child Development to describe their screening procedure.

The developmental point of view respects the fact that every child has his/her own unique pattern and rate of growth, as illustrated in the following verse:

> Children learn to walk at different ages.
> Some toe in, some toe out.
> Who dares to legislate the age children shall walk,
> or which is better, toeing in or toeing out. (Carll, 1980)

The obvious message is that maturation is a natural process which cannot be rushed by adults or by school policy. Some children are not ready to enter school at age 5 or 6 and no school policy or school entrance age can legislate them into maturity and school success. School success, as defined by the Gesell Institute, is "achievement without undue stress, being able to *cope* with all of the stimuli in the school environment and *learn* at the same time" (Haines, 1981). The overplaced child uses most of his energy trying to cope with the stressful situations in the classroom, thus, having no time for learning or for developing into a well-integrated person. By using this system of formative evaluation, the teacher can help avoid stressful situations for the child, and hopefully, the child will feel comfortable with himself and school expectations before the critical third grade level. If a child is still feeling misplaced or insecure by the third grade, there can be permanent psychological and academic damage.

Do You Recognize These Children?

"Academic Albert"

Classroom Behavior First Grade (first semester)

Straight A-student
Loves to read
Does not socialize well; afraid of other children
"Loner" at lunch and recess
Devotes all of his time to studies--no sports

Examiner's Recommendation

His excellent verbal skills have overshadowed development in other areas. His intellectual gift has "seduced" the parents and teacher into thinking he is more developmentally ready than his functioning level indicates. Placement in the first grade has resulted in skewed development--he needed an extra year to grow before entering first grade.

"Tall Tom"

Classroom Behavior First Grade (first semester)

Daydreams--in a world of his own
Loves recess--plays all day
Cannot concentrate--is easily distracted
Failing--does not see a need to study
Good natured, but a problem in classroom

Examiner's Recommendation

He is physically large, but his composite growth (intellectual, social, maturity, skills and coordination) is not as fully developed. He is developmentally at the four-year-old level--so he needed an extra year or two to avoid being labeled as a slow learner in the first grade. He is developing normally, but not ready for school.

"Normal Nancy"

Classroom Behavior First Grade (first semester)

Shows need for attention in somewhat disruptive behavior--pushy
Moody--cries often
Cannot concentrate on materials now
High absenteeism
Anxious about being wrong

Examiner's Recommendation

This is a very tense child who is in over her head. She wants to do well, but is not ready to handle the material and experiences of first grade. Fall birthdate--needed an extra six months to one year to reach full readiness. May *lose* confidence if *trying* to *compete with* students a year older than she is (Carll, 1980).

Alternatives to Overplacement

How do we avoid the trauma of overplacement? Are there alternatives to the "lock-step" progression of our current school grade organizations?

Several of the more positive and effective steps necessary to promote better learning experiences are listed as follows:

Entrance to School

We must recognize that entrance requirements to school at the primary level are of greater importance than the entrance requirements into college. We must be more flexible in school entrance policies by eliminating (or restructuring) the birthdate requirements. A suggested revision for the entrance age requirement might be chronologically six years by June 1st for girls and March 1st for boys--reflecting the difference in maturation rates at this age. These dates would allow for more growth before entering school, but a flexible attitude to this policy should be maintained to permit special children (gifted) and developmentally immature children to enter school when they are ready.

Prekindergarten Screening

The screening at this point in a child's development is essential to ensure proper placement and success in school. By interviewing the youngster (usually 4-5 years old) the examiner can evaluate behavioral patterns, language development and social skills--all vital to a child's success in the classroom. A sample question from the interview asks the child, "Did you have a birthday party?" If the child responds with a detailed description of everything--including unrelated information--he is displaying the "verbal overflow" typical of a four-year-old. If, on the other hand, the child's answer is a short yes or no and other details are revealed only through probing, the child is displaying the quiet, approval-seeking behavior of a normal five-year-old.

Another interview question which reveals the wild imagination of the four-year-old or the more restrained and refined response of a developmentally five-year-old deals with animals and interests. The four-year-old will list wild and unusual animals, while the five-year-old will name only zoo animals. The four-year-olds will describe many kinds of activities that interest them while a five-year-old will answer with the one word--play--for almost every question about their favorite activity.

The responses to these and other questions and behaviors observed during the interview are important cues to the child's stage of development. Another part of the screening involves manipulative skills (holding and using a pencil, arranging cubes in patterns, and the "incomplete man" drawing). The manner in which the child completes the tasks is a developmental diagnosis. The examiner may determine the skills the child possesses and match them with the demands that would be placed upon him/her in a specific grade.

The Prekindergarten Class

The prekindergarten screening would determine which children were ready for kindergarten. These children who are not developmentally

ready should be offered a prekindergarten class or another year of nursery school. In this year, programs geared to develop social awareness and skills, language, and manipulative skills would provide these students with the experiences necessary to more fully develop school readiness. Gross motor activities and social play would be the emphasis of a prekindergarten class.

Pre-first Grade Screening

The screening at this age is vital. If a child is enrolled in first grade without a complete screening for school readiness (not a simple reading readiness test), the child has a 40-50 percent chance of failure or of needing remedial services before the third grade (Haines, 1981). Retention and learning disabilities are both overwhelming problems that can be avoided in many instances when the school provides for proper diagnosis of potential problems. The parental attitude in this decision-making process is extremely important. The parents must realize that placing the child in first grade before she/he is ready can have grave consequences. On the other hand, parents who enroll their child in a transitional pre-first grade class will be providing the necessary time for growth to ensure proper development and success in school.

The Pre-first Grade Class

This class is often called a Transition Class, Reading Readiness or Pre-Primary. This class is for those six-year-olds who are developmentally younger and need extra growing time before entering first grade. The three main characteristics include:

1. movement-experience emphasis in the class
2. pre-first grade children eligible for first grade but not ready
3. most of the children entering first grade the following year

The program is designed to introduce some first grade experiences during the year to prepare these students for the next level. The goals of the program are time to grow, experiences and acceptance without condition. In this positive atmosphere, the individual's rate of growth is maintained, not pushed or stressed beyond the child's ability to cope. It is not a retention, in that the child *is* progressing, moving forward to a new level (although not in the traditional pattern of K, 1, 2, etc.). It is his/her unique pattern that could provide the necessary steps to success and reduce need for remediation or retention later.

There are many success stories of the transitional class. One case in point is the Sioux Falls (South Dakota) School District. In 1980, 28 percent of the former "junior-first-grade" participants ranked in the top quartile of their first grade classes, 70 percent ranked in the second and third quartiles, and only 2 percent ranked in the lowest quartile. All of these youngsters had been deemed "high-risk" students as kindergarteners (Salem, 1981). This is a remarkable contrast to the staggering numbers of children all over the country who are allowed to fail in the first grade (due to overplacement) and who continue to fail over and over again.

Summary

By implementing a screening process in our schools at the prekindergarten and pre-first grade levels, we can help reduce the *other* "3 R's" of education--remediation, retention, and referral to psychological services.

Our attention should be directed to the primary entrance to school. As Plato wrote in *The Republic*: "Don't you know that in every task the most important thing is the beginning, and especially when you have to deal with anything young and tender?" (Salem, 1981)

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USING TESTING IN A TITLE I PROGRAM

Jean Berger

A Title I reading program requires the teacher to be well-aware of the roles that measurement and evaluation play in promoting pupil learning. Data are collected for the purpose of diagnosing strengths and weaknesses, thus giving the teacher direction as to what content must be taught. Test scores help in placing the pupil in materials suitable for his achievement level, thereby preventing the child from becoming bored or frustrated.

During instruction, the teacher is constantly monitoring learning through what is commonly called formative evaluation. This may be done through observation and general questioning but it also involves evaluating written work and short tests or quizzes.

And then, there are the data which help in making summative evaluations. If attended to properly, they will give information about individual achievement and the success of the overall curricular program.

Lest my message be lost, all four of the evaluation types discussed above are used toward one major end--the promotion of pupil learning. The remainder of this discussion is devoted to the specifics of this endeavor.

Based upon teacher referral, the student is introduced into the Title I Reading Program. In order to give a more prescriptive remediation, an analysis of the student's strengths and weaknesses in the cognitive and affective, perceptual, and auditory areas should be investigated. For a more adequate assessment of basic skills and comprehension, an informal reading inventory is administered to diagnose the reading problems and obtain an average reading level.

My choice of a good inventory, and there are many, is the McCarthy Individualized Diagnostic Reading Inventory. This instrument is designed for primer through level eleven-twelve. The primer through fourth levels were established by the Spache formula, and levels five through eleven-twelve were established by the Dale-Chall formula. A controlled vocabulary list is included in the Inventory with basic sight words which are used in a student's everyday vocabulary. The passages are graded, with comprehension and fluency evaluated on proficiency levels for independent, instructional, frustration, and listening potential percentages. A special interest inventory is also included as a supplement for a "total" diagnosis.

Jean Berger is Title I special reading teacher working with primary grade children in two different elementary schools in Lynnville, Indiana.

A "homemade" score profile for each pupil is completed by graphing specific content areas. This profile (see Figure 1) serves two purposes. It is a concise way of representing the information gathered on the child, and it provides direction for instruction. For instance, Jane Jones has exhibited 100 percent mastery of short vowel sounds and is progressing well with consonant blends. However, the other four areas are in need of additional instructional attention. As the pupil progresses, the graph is updated.

The Wepman Auditory Discrimination or Goldman-Fristoe-Woodcock Auditory Discrimination Test is given to detect any deficiencies in acuity since losses in auditory acuity may affect the learner's ability to channel properly certain consonants and consonant blends. This channeling through the auditory canal is important, especially in primary grades where more emphasis is placed on phonics.

Finally, the perceptual problems are screened by using a test for visual focusing on far-point and near-point distances. Instead of the Snellen Chart, the Keystone Telebinocular Eye Screening Instrument is used for a more precise diagnosis.

If the student's reading level on the McCarthy test is averaged to be five months or more below his expected grade level, a standardized Gates-MacGinitie Reading Pretest is administered to verify the McCarthy score. These results help to place the child in reading materials compatible with his independent reading level.

Caution should be exercised at this point in the interpretation of grade equivalent scores. For example, two children may be reading at the same grade level, but differ greatly in the use of word analysis for vocabulary recognition and context clues. Each of these areas needs to be considered separately, rather than as a composite. From my own personal research, I have found the Gates-MacGinitie to yield highly reliable scores.

The student's record is then compiled. A folder is made along with the student's individual record sheet. On the sheet is the parent/guardian's name and the child's birth date, phone number, and reading expectancy. The Bond and Tinker Reading Expectancy formula is computed by multiplying the I.Q. in decimal form by the years completed in school and adding 1.00. For example if a child has an I.Q. of 125 and is at the end of 3rd grade, the formula would be:

$$RE = 1.25 \times 2.8 + 1.00 = 4.5$$

The student has a reading expectancy of fourth grade/fifth month. The reading expectancy should be included in the student's record only as useful information for expected achievement. For a student who is progressing slowly, the reading expectancy information helps determine his potential for growth.

Pupil Name Jane Jones

Grade 2

School Lynnville Elementary

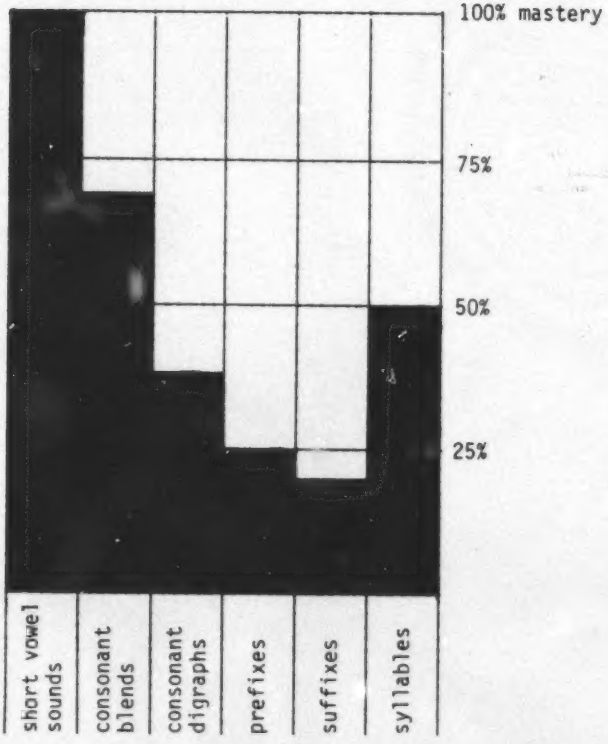

Figure 1. Skills progress chart (profile).

Also included on the record is information on informal and standardized tests, vision tests, auditory tests, previous skill test results, special interests, hobbies, and recreational reading. This data is used to develop the instructional objectives for each student. Goals are planned in terms of days, weeks, months, and possibly even a year. Skills are scaled according to sequence and categorized according to difficulty.

A cumulative file is then developed for collection of data such as work sheets, creative writing, handwriting samples in spelling for diagnosing perceptual difficulties, and skill sheets. This allows for the continual assessment of each child's growth and the redirection of instruction where and when needed. Pupil growth is recorded on the progress profile. As discussed earlier, the progress profile is designed to help evaluate the levels for teaching, redirecting instruction, or remediation. It gives a pictorial view of a skill or concept to be mastered at the absolute level of mastery. Furthermore, the graph can be valuable in showing the child's parents what skill is being mastered and the degree of mastery that has been achieved. This method takes the guesswork out of decision making.

Teaching begins at the instructional level of reading. Warrick County purchased supplemental books graded below the adopted grade-level basals, and the students are placed in these supplemental booklets according to their proficiency reading levels. The non-reader is set on task with alphabet recognition and auditory sounds.

After intense exposure to a specific task, a formative test is given to assess the learning taking place. This criterion-referenced test may be in the form of visual cards, oral recitation, crossword puzzle sheets for sight words, and/or comprehension tests stressing main ideas and key words. If the student has not mastered the skill at this point, another instructional approach may be warranted. Such an approach could be reteaching through Scholastic Kits or teaching by programmed readers.

Additional instruction is given until the child appears to have mastered the skill. Another criterion test is then administered to measure the expected outcome. If the results are again negative (and generally they are positive), a more rigid, sequenced, concentrated approach may be necessary. This would be in the form of repeated drilling on flash cards, blackboard, or tachistoscope for twenty minutes, three to five days a week. If mastery has taken place, a "new" objective is introduced.

If the student has exhausted all possible means of instruction, a reassessment of objectives should be examined. Goals defined previously may be unrealistic for the individual. Certain variables such as skills missed or processing disability may hinder mastery of the goal. Continual assessment allows us to make these decisions.

After teaching, formative testing, and reteaching, the student will hopefully have reached 100 percent mastery of the prescribed objectives. He may then be directed toward one of two options. He may serve in a peer tutoring situation by helping a "weaker" student learn a skill or be placed in enrichment activities that reinforce the skills he has learned. Both options produce success. Peer tutoring *enhances* success; supplemental reinforcement of a skill already learned *ensures* success. After mastery is gained, a new skill or concept may be introduced. The cycle is then repeated again until each task is learned.

Also to increase independence of reading, recreational reading is encouraged. Since a Lynnville/Warrick County Bookmobile supplies books for my class, recreational reading is included as part of corrective instruction. Each book placed on my library list has been graded by the Fry Reading formula for approximate grade level of reading.

At the end of the year, a standardized Gates-MacGinitie posttest is given for determining each student's year-long growth, and this is reported as part of the Title I Reading Report.

In conclusion, I have found by evaluating each child formatively, I have gained more perspective into his abilities to process language. It has also helped me to be more receptive to his emotional, physical, and social needs. By this awareness I can communicate my support to him and his parents and hopefully encourage self-confidence, accomplishment, and motivation toward more independent reading.

Testing, I feel, is a valuable tool in teaching and if used with expertise can prove to help in directing a more precise method of teaching. The key element to learning for mastery is *time*--time to teach, time to assess, time to remediate, in short, time to learn.

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HOW HIGH DO THE BLACKBIRDS FLY?

JoAnne Dowers

Introductory Background

North Vermillion School Corporation is a small rural corporation of nearly one thousand fifty students. Three elementary (K-6) buildings feed into the centrally located junior-senior high school building. Currently an individualized corrective reading and math program are in operation at North Vermillion Junior-Senior High School.

The superintendent states, "A key to the development of any program is the personnel. Prior to the corrective programs, the school system was fortunate to have a teacher with ten years' high school language arts experience, six of these at North Vermillion, who also worked as an elementary language arts teacher and later a Title I reading teacher. Also available was a remedial reading teacher who served as a Title I coordinator to give input and to participate in the programs." The following treatise represents the teacher's view of the development of the present program and how the evaluation aspect lends itself to the promotion of learning.

Traditional Labels and Typical Excuses

In the typical elementary school classroom across the United States there are likely to be three or more reading groups. They may now have more sophisticated labels, but experienced teachers quickly identify with terms such as "blue jays and redbirds." Our ever-growing concern for the achievement of the lowest group repeatedly caused us to query, "How high do the blackbirds fly?" That question served as a catalyst for the present corrective reading program for grades seven through eleven and eventually led into the corrective math program for grades seven through nine.

As a typical secondary English teacher, I had often complained that those elementary teachers just weren't doing the job. Kids came to high school unprepared. Oh, over half of them weren't bad--some, even pretty good; but that bottom group--couldn't read, couldn't spell, couldn't write! No way could I teach those kids all that! They should have had all those skills when they came to my class. If they didn't, that was someone else's problem. Then, I was assigned to teach all the language arts at the intermediate level in an elementary school.

JoAnne Dowers is Title I coordinator for the North Vermillion School Corporation, Cayuga, Indiana.

During my four years teaching reading, writing, spelling, and grammar to students in grades four through six, I learned far more than all my previous education and experience had provided. I came to realize that those elementary teachers whom I had criticized were many times miracle workers in accomplishing so much from so little. Through my close association with kindergarten and primary teachers in our small building, I acquired new knowledge and wisdom about the varying abilities and backgrounds children bring to school and how their readiness affects their achievement for years to come.

Myths and Fantasies About Equality

I have been amazed at the way all children are expected to be equal in mental growth and maturity at age five. That children do not all sit up, roll over, crawl, walk, or talk at the same age is common knowledge. Still, on September 1, after their fifth birthday, most children in Indiana enter kindergarten and by some unknown magical power become equal. Teachers and parents alike seem to expect identical achievement from all children in a given class or grade and strive to promote them at identical rates. The child who lags behind is soon labeled a failure by his parents, his peers and, all too often, his teacher. The frustration of becoming a failure before reaching the age of six is incomprehensible to me. However, I can relate very well to the frustration of a teacher who feels pressured by a society that demands equality when in reality there is none.

Concerns Culminate Into Questions

As I became more and more aware of the reading problems of a sizeable proportion of students and more interested in making an effort to correct those problems, I accepted the position of Title I reading teacher for the entire elementary building. This meant working with children kindergarten through sixth grade and working closely with their teachers. For the two years that I functioned in this capacity my concerns for the thirty percent of the students at the bottom of the spectrum grew--not just concern for their reading skills, but for their self-images and for the type of young adults they would possibly become.

By this time North Vermillion Schools had adopted a reading program with every child working at his individual level. Still, according to results we had from our standardized testing program, we knew the "blackbirds" were those working at least one and one-half levels below grade level with grade level assumed to be average.

Grouping is great if we do a better job that way. Individualized levels are great if we strive for ultimate progress. My great concern was that when our children left the three elementary schools at the end of sixth grade, they were once again expected to somehow gain

equal footing with their peers just as when they had started kindergarten. The "redbirds" and "blackbirds" were handed the "blue jay" book and told, "It is time to fly." Junior high school teachers teaching in a high school atmosphere were not aware of the previous groups and levels and did not realize that they were teaching the "blackbirds" to cry more often than to fly.

Elementary teachers were doing an excellent job of moving these children along but, at best, only a few ever caught up to grade level. Students working at their ability levels were instructed to do their best and were rewarded with "A" and "B" grades. For many who entered seventh grade, their best quite soon became failing.

A Corrective Course of Action

A superintendent with a background in reading education listened to the concerns expressed by some teachers. The Title I coordinator and I were given the green light to implement a remedial reading program at the junior high level. In 1978 our present corrective reading program came into being in a very limited capacity but has flourished into a full-scale service of which we are quite proud.

The first year we hand-picked twenty students from the sixth grade Title I reading program in the three elementary schools. On the basis of standardized achievement test scores in reading and past performance as reported by elementary teachers, we formed a corrective English class at seventh grade. We had a small room, a hodge podge of hand-me-down material, and not a great deal of support from the staff. Most raised an eyebrow and contemplated, "I wonder what goes on in there?"

By the end of that year all of us involved with the program were convinced that we were moving in the right direction, but we had become aware of the need for a formatively structured reading program. After shopping around extensively through the summer, we purchased the program we felt best suited our needs. The paragraphs which follow briefly describe the fashion by which we are implementing that program.

Identification and Placement in the Program

Our students are still identified by teacher referrals and through the elementary Title I program. Initially criterion referenced placement tests (commercially prepared for use with our developmental reading program) are administered to each student in order to find at what level his specific strengths and weaknesses occur. Each placement test spans forty skill objectives in progression from level to level. It is possible for a child to "score" anywhere from level two through level eight. Most remedial seventh graders usually place in levels four or

five. This does not necessarily mean their comprehension level is that low, but that there are a number of skills at these levels that they have failed to master. At the same time they could quite possibly be very competent in some of the higher level skills.

Diagnosis, Prescription, Progression

Basically the placement tests are diagnostic/prescriptive, and a computer print-out furnished by the company scoring the tests guides the teacher and student to lessons pertaining to the student's weaknesses.

The program provides two or three lessons for each objective plus a correlation to numerous materials from several other publishing companies. As the student completes prescribed lessons, he is tested for mastery on the objective taught. If he "falls short" we try again. At the end of each level there is an evaluative test administered in order to obtain a second measure of achievement. The speed at which a student moves through the hierarchy of skills depends on his motivation and his innate ability to master and retain cognitive material.

Every student in the reading lab is dealt with openly. Each receives a personal copy of his computer print-out showing an accurate picture of his reading ability. He is helped to accept himself as he is and to set realistic goals for improvement. As he reaches a goal, this accomplishment is recorded on his folder where he can tangibly see how many objectives he has mastered and in how many levels he is competent.

A few students, those with minimal problems or whose progress is rapid, stay in the lab for only one year. Most, however, remain through eighth grade. Some whose progress is much slower are enrolled for ninth grade. A relatively small number come to the lab for their entire English program. From the original class of twenty only two students are enrolled in the high school program as sophmores. After ninth grade each student who remains in the program is on an individualized curriculum plan geared more to teaching survival skills and reading for enjoyment. Credit equivalent to any other English class is received. Grades are given in the lab, but are based more on effort and quantity of work turned in with regard to the difficulty of the level. Hopefully quality will come as a byproduct. Usually when a student consistently maintains "A" or "B" grades, he is ready to be released to a regular class.

Released students are always given the option of returning if they experience difficulty, but few do so on a permanent basis. They may come from study hall for help with assignments or just a little moral support to get them through a difficult time. Other teachers and staff members are becoming very understanding and cooperative in

helping these weaker students. Often we are asked to give special assistance with assignments from other classes. The learning disabilities teacher and the guidance director have also been very helpful. Most important is that the students realize that the lab is here to meet their needs.

In the fall of 1980 a math lab was set up on a similar basis using a program from the same company. The Title I coordinator was instrumental in establishing the math lab and in training junior high math teachers to direct an individualized program.

Stimulation Brings Success Brings Solutions

In both programs we have had success in raising levels of mastery, improving achievement scores, and helping kids not to be unrealistic in setting goals and expectations for themselves. When a student realizes that he is not constantly being compared with someone else and that success is a possibility for him, and when he later experiences that success, his self-image improves, his attitudes improve, and his work habits improve. Because work is concentrated only on necessary skills, achievement rates are greater.

By the time they enter tenth grade nearly all of our students are able to earn passing marks with varying degrees of success in the regular English classroom. Yes, we have found that "the blackbirds can fly quite high" when given the necessary basic teaching, individualized help, reinforcement, and encouragement.

In answer to my own question, "How high do the blackbirds fly?" I must answer, "There are no limits!"

CRITERION-REFERENCED TESTING: AN ENHANCEMENT TO LEARNING

Jim Thomas

Utilizing criterion-referenced testing data to aid in promoting effective learning in the cognitive domain is an outcome of Organizing For Instruction in the Metropolitan School District of Martinsville, Martinsville, Indiana. Becoming an outcome-based school corporation has evolved over a number of years. How did we get to this point? Allow me to briefly describe and relate the basic concepts of Organizing For Instruction.

Under the direction of Dr. Tracy Dust, Superintendent of Schools, teachers of language arts began Phase 1 of the project which required the documentation of specific behavioral or performance objectives for grade levels K-12. Obviously, this was an enormous undertaking requiring hundreds of hours of work from enthusiastic classroom teachers and administrators who were extremely eager to become involved in curriculum development at the local level. When Phase 1 was completed after months of work, not only had objectives been established but coordination between grade levels had also been achieved. In addition, the process for instructional change had been incorporated into the concept of Organizing For Instruction. When a classroom teacher observed a pupil weakness in meeting necessary objectives, remediation began.

Under the guidelines of Organizing For Instruction, all students are required to demonstrate Level I proficiency, mastery of basic skills. For example, in grade three a Level I objective would read:

> The student will be able to use the apostrophe correctly in writing contractions with 80 percent accuracy.

Levels II and III objectives have been written for the more advanced student who is enrolled in accelerated courses, basically those performing at least one standard deviation above the normal population.

Teacher designed mini-tests have also been written to correlate with grade level objectives so that the basic principle of teach, test, and re-teach (if necessary) becomes a daily reality. Thus, when a teacher has taught an objective or set of objectives, students are given a mini-test to ascertain whether they have reached mastery.

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However, these tests do not replace a teacher's unit examination. They, in short, are used to enhance rather than replace.

With this very brief background, let us examine how criterion-referenced pretests are used to promote effective learning situations. Pretests are administered during the second week of school at each grade level. At the elementary level, tests are designed to demonstrate the degree to which students have retained basic skills (Level I objectives) over the summer months. Thus, teachers are provided with data which give them a definite starting point for the new school year. It is necessary to remember students are expected to demonstrate proficiency with all Level I objectives. In time, those students who cannot demonstrate the necessary proficiency are, of course, provided assistance in special remedial programs.

Our data indicate student strength at the third grade level in nine of twelve areas tested, thirteen of fifteen at the fourth grade level, and twelve of fifteen areas for the fifth grade. A re-teach cycle has begun in those areas where work is needed to achieve mastery before moving on to further language arts skills.

Having computer services available through the Evaluation Assistance Center at Indiana State University, secondary English teachers are able to see pretest results for more than 1200 high school students. They are immediately able to focus in on those areas of student weaknesses by examining those objectives which have not been mastered. By having this data available, teachers may individualize and direct some peer tutoring. Also, long-range planning becomes quite possible and thereby probable.

The data provided by computer analysis of the pretest (100 items) give the following information:

1. Percentage of pupils correctly responding to each item: If the percentage is high, the teacher knows he/she will not need to spend too much time on that particular skill. If the data shows few have mastered a particular objective, there is good instructional direction given to the teacher.

2. Discrimination level of each test item: This is important for monitoring item quality and/or teaching effectiveness for each objective. If more low achievers correctly respond to a test item than do the high achievers, something is amiss.

3. Personal profiles of each student: A teacher may determine the specific strengths and weaknesses (according to pretest results) of each student. This provides direction for individualization.

Using the data, certain teachers at the freshman level are able to immediately design a program which allows them to spend, for example, only about one-fourth the usual time on parts of speech because of indicated pretest mastery. In turn, this allows them to double the time allocated for the more difficult concept of dependent and independent clauses. Needless to say, the student is no longer "bored" by having to constantly spend unneeded time in areas that were mastered earlier and is less frustrated since he is usually guaranteed success in more complex areas of English grammar because of additional time allotted. Computer analysis of our testing program has been a major factor in organizing classroom time for maximum benefits to learning.

The same 100-item test will be given in May. By comparing results with those gathered in September, some indications as to overall curricular effectiveness can be discovered.

Within the framework of Organizing For Instruction, the evaluation process has provided each teacher in the corporation pretest capability, a coordinated process of monitoring student progress during the year, and a definite rationale for those very pertinent decisions concerning a student's assignment to our remedial or accelerated programs. With posttest data we are able to evaluate progress in terms of the objectives which have been selected for testing purposes.

At this time, we can identify a definite coordinated thread running through the language arts curriculum in grades K-12. Teachers are finding that this gigantic effort is producing results, and they see student progress as they had not earlier experienced or been able to document on a corporation-wide basis.

It is also important to note that our standardized test results are used to keep school personnel current on our students' national ranking. With the use of criterion-referenced tests, we have gained a great deal of diagnostic information which permits the local educator to determine student proficiency on pre-stated performance objectives which the norm-based test does not allow.

In conclusion, we at Martinsville have the necessary machinery through Organizing For Instruction to strengthen the language arts curriculum on a corporation-wide basis because we are now in a solid position to help students learn. Thus, through a coordinated effort, we can identify and react to the individual needs of our students. So far, the data we are receiving have been most satisfying because they clearly demonstrate effective teaching and continued student growth.

In short, identification of an educational problem and a positive reaction and solution are a school system's responsibility. In the M.S.D. of Martinsville, the process is working.

EFFECTIVE INSTRUCTION THROUGH EFFECTIVE ASSESSMENT: A MASTERY APPROACH

Larry Rowe

There is a serious challenge sweeping the country that will hopefully threaten the philosophical tenets now holding the majority of our schools in place. This challenge is in the name of mastery learning, and it asserts that under appropriate learning conditions, most students can learn, and learn well, what schools have to teach. Such a belief has now become reality in numerous schools where educators have taken a systematic look at "altering the variables" which have an impact on learning. As a result, the learning conditions to which young people are exposed have improved tremendously (Bloom, 1976).

It is not my intent to deal with all the variables capable of being altered in a mastery program. Rather, I will focus on the learning variable that carries, and will cause, the most anxiety for school personnel, that is, assessment of student progress and the resultant implications for instructional planning and practice. In order to understand this cause for anxiety, it is important to compare the philosophy underlying assessment in a traditional program with that of assessment in a mastery program.

Teachers and administrators in traditional instructional programs utilize assessment for the purpose of assigning grades. Assessment becomes an end in itself rather than a means to an end. Information gained from students is not generally used to correct learning errors and/or alter instruction. Students are put on a continuum from success to failure with no chance to alter an inflexible situation. Teachers use the information received to categorize students as *good*, *bad*, or *average*. Students, in turn, find the information reinforces their feelings of success or failure.

Traditional assessment programs do not encourage youngsters to become actively involved in corrective action nor do they guide teachers in suggesting prescriptions for improvement of learning. Traditional assessment procedures do little, if anything, to improve the teaching/learning process and reduce education to a "one shot, hit or miss, opportunity." Students who fail to measure up to the acceptable grade are taken on to the next series of tasks *regardless of the results of their performance*. One can see the vicious cycle of failure and dejection that can and does ensue for many students.

Larry Rowe is junior high school principal in the Johnson City (New York) school district.

The use of assessment instruments and procedures in a mastery approach takes on new meaning for both teachers and students. Assessment now becomes a means to an end in that feedback is used by teachers and students to improve the instructional and learning process. Assessment is the basis from which teachers and students realistically determine what is needed next. If, for example, the feedback indicates learning has not taken place at a preset performance standard level then teachers are able simply to modify instruction. Students are able to relearn and engage in rationally meaningful corrective action. The goal is for all students to learn what is being taught, and the initiative to go the extra mile in fulfilling this goal is in turn encouraged by the process. Assessment is not win/lose or "one shot"--it is now continuous and pervades the entire educational process.

The difference existing between assessment in a traditional program and assessment in a mastery program can best be summed up as follows: Traditional assessment is tantamount to evaluating a sports team by determining whether it and its players are winners or losers. Mastery assessment, on the other hand, deals with observing the team and the way in which it plays, analyzing the plays, and determining what needs to be done to improve its game. Because assessment is such an integral part of the learning process and because it must be done on a systematic basis throughout a given unity, how teachers plan and carry out instruction is absolutely critical.

As a case in point, in Johnson City we have divided our instructional process into three stages: pre-teaching, teaching, and post-teaching. For each unit of learning (a unit is comprised of approximately 2 weeks' work) there are assessments that must be carried out within each stage.

Pre-Teaching

Before information received from assessment procedures can be used for the improvement of teaching and learning it is imperative for teachers to clearly define the objectives to be learned in a unit and the actual performance level required for proof of mastery. Additionally, teachers must define the prerequisite skills needed by students to learn the stated objectives. An example of this situation would be students' having the prerequisite skill of writing a complete sentence before attempting to learn the objective of writing a complete paragraph. It is at this critical point in the process that assessments must be made to determine whether or not students possess the necessary prerequisite skills.

There are many ways to assess students on prerequisite skills. Using the example stated above, teachers can quickly determine student competency in writing complete sentences by asking students to write their own sentences based on 3-5 words listed on the blackboard. A

quick check of individual student papers by the teacher's circulating around the room will "expose" troubled areas that need attention (intervention).

Other methods readily available and quick to administer include the following:

1. asking students to do a particular problem on their papers when the prerequisite skill is multiplication of two-digit numbers

2. posing questions to the entire group and asking for signaled responses from each member of the group--thumbs up if agreed, thumbs down if disagreed, thumbs to the side if not sure

3. having students raise their hands when they know the answer to a question (Hunter & Dang, 1976, p. 5)

While one could easily list numerous other ways to gain feedback on prerequisite skills, the point to be made is that before students can be expected to learn the objectives of a given unity they must possess the prerequisite skills needed. If they are found to be deficient in one or several areas, the teacher must then decide on one of four corrective actions:

1. teach the prerequisite skill(s) to those students in need

2. review the prerequisite skills before or during the initial teaching stage

3. compensate for prerequisite skills through altered instruction or alternative materials

4. alter expectations for learning

Teaching

Instruction over unit objectives takes place in four discrete, yet interrelated, steps. The steps include initial instruction, guided practice, criterion-assessment-correctives, and independence. Assessment and decision procedures are an integral part within each step.

Initial Instruction

It is at this stage that teachers use their "best shot" in getting students to learn all or a portion of the unit objectives. "Best shot" teaching consists of the following characteristics:

1. an explanation of what is to be learned and how

2. an explanation of why it is important and how it can be used now and in the future

3. a combination of modes to teach the same objective(s) (e.g., lecture and film, read and discuss)

4. a teacher's modeling of the critical elements in the process of product to be learned

Assessment during initial teaching is done in the following ways:

1. teacher observance of body language, facial expression

2. sampling of entire group by posing questions in order to focus attention and develop readiness to hear the answer, than getting answers from representative members of the group

3. signaled responses from each member of the total group:

   "Raise your hand when you know the answer to this question"; "Nod your head if you agree with the following" (Hunter & Dang, 1976, pp. 4-5).

Again, the feedback from students will indicate if corrective actions must be taken or if instruction and learning can continue unaltered.

Guided Practice

Once instruction has taken place, teachers must now involve students in the task of practicing what has been taught. Good guided practice activities allow for short, intense experiences with a great deal of teacher/student interaction. Teachers must "roll up their sleeves" and get with students while they are demonstrating the skills or processes to be learned. Assessment takes the form of individual student monitoring and, in some cases, small group observation. Once again, assessment is used as a basis for deciding what teachers and students must do next.

Criterion-Assessment-Correctives

The Criterion-Assessment-Correctives stage is the time within a unit when a more formal assessment of student progress can be made. The assessment instrument must be directly related to the specific objectives being assessed and provides both teachers and students information as to which objectives have been mastered and which objectives have not. Decisions for proper corrective action can then be made.

Independence

This stage occurs when students have been certified by teachers as being able to perform the necessary functions independently. Assessment during this stage occurs more intermittently through independent assignments completed outside the realm of the classroom setting.

Post-Teaching

By the time instruction reaches this stage, it is fairly well-known to both teachers and students the degree of mastery that has been achieved. Yet, the post-teaching stage affords everyone the opportunity to review and reaffirm the major objectives which have been taught.

Assessment now takes on a formal structure in that all objectives are keyed to items within the assessment instrument, thus still allowing teachers to be able to determine where students are in need of additional corrective help. Students are encouraged to assess their individual performances and take the initiative to improve their learning through their own appropriate corrective action.

Several conclusions become evident as one views the intent of assessment and its function in a mastery approach:

1. Assessment is continuous throughout the entire teaching-learning process.

2. Information gained through assessment is used as a basis for making decisions about learning.

3. Assessment is viewed by students and teachers as a *means to an end*, the end being effective and meaningful learning.

4. Assessment encourages rather than discourages initiative on the part of students and staff to improve the process of learning and teaching.

5. Assessment provides for continuous and positive learning and not a "one shot" or "hit/miss" learning experience.

6. Assessment allows students to demonstrate improved levels of performance at frequent intervals throughout their careers.

REFERENCES

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